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THOMAS, KAYDEN, HORSTEMEYER & RISLEY, LLP
100 GALLERIA PARKWAY, NW
STE 1750
ATLANTA, GA 30339-5948

EXAMINER .

SMITH, JEFFREY S

ART UNIT PAPER NUMBER

2624

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/20/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/722,307

Applicant(s)

BAMBERGER ET AL.

Examiner

Jeffrey S. Smith

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) 17-25 and 29-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 and 26-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date Apr. 2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of claims 1-16 and 26-28 in the reply filed on February 15, 2007 is acknowledged. Claims 17-25 and 29-34 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to nonelected inventions, there being no allowable generic or linking claim.

Drawings

2. The drawings are objected to because:

Figures 2A-2D are numbered empty boxes. Each box should contain a label and a reference number. For example, the interior of box 234 should read "display 234," and the interior of box 220 should read "film feed 220."

In figure 5, step 708, the significance of placing quotation marks around the word shoulder is unclear.

Step 728 should be renumbered as step 716 for clarity because it is located between steps 714 and 718.

In figure 6 step 812 "connectivity)" should read "connectivity"

The second page of figure 6 should be labeled "FIG. 6 (continued)" or, preferably, the first page of figure 6 should be figure 6a and the second page should be figure 6b.

In figure 7, step 905 should be connected to the rest of the figure or steps 902-905 should be labeled as a separate figure.

Step 915 should be connected to the rest of the figure or steps 906-915 should be labeled as a separate figure.

Steps 926 and 938 should be on the same page as steps 920-936.

Steps 920-938 should be connected to the rest of figure 7 or be labeled as a separate figure.

The second page of figure 7 should be "FIG. 7 (continued)" or, preferably, the three figures currently listed as figure 7 should be relabeled as figures 7a, 7b, and 7c.

In step 960 of figure 8, "done" should be changed to "failed" to be consistent with the text in the specification.

In step 978 of figure 8, "defined" should be changed to "selected" to be consistent with the specification.

Steps 970 through 980 should be connected with the rest of figure 8 or the two independent sections of figure 8 should be labeled as separate figures, such as figures 8a and 8b.

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, all steps of claims 1-16 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

For example, claim 1 recites "scanning a set of film mammograms, thereby to obtain digitized images of the film mammograms" which is not shown in the drawings. Claim 1 further recites "storing the digitized images in a memory of the system" which is

not shown. Claim 1 further recites the elements of "preparing... and using..." which are not shown in the drawings. This is given as an example of elements that are not shown. The other claims contain elements that are similarly not shown in the drawings.

4. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

5. 35 U.S.C. 112, first paragraph, requires the specification to be written in "full, clear, concise, and exact terms." The specification is replete with terms which are not

clear, concise and exact. The specification should be revised carefully in order to comply with 35 U.S.C. 112, first paragraph. Examples of some unclear, inexact or verbose terms used in the specification are:

The description of figures 5-8 in the specification is often inconsistent with the steps shown in the figures. For example, step 704 of figure 5 shows "histogram computation," yet the text in paragraph 77 discusses "a histogram is generated 704." The text in paragraph 77 should read "a histogram is computed 704" to be clear in the discussion of step 704. This is an example, many of the other descriptions of the steps in the detailed description are inconsistent with the steps as shown in the figures. The discussion of the steps of Figure 5 would be less confusing than it is if the reference numbers begin with 5 instead of 7. Figure 6 would be easier to follow in the specification if the reference numbers begin with 6 instead of 8. Figure 7 would be easier to follow if the reference numbers begin with 7, and Figure 8 would be easier to follow if the reference numbers begin with 8.

In paragraph 65, rollers 226 are not shown in the drawings.

In paragraphs 68 and 70, "rollers 236" should be "rollers 226."

In paragraph 83, "The pixels are contiguous, but outside, the label are generally dark" should be "The edge pixels are contiguous, but outside the label they are generally dark." Also, a period should be placed at the end of this sentence.

Steps 714 and 732 are not discussed in the specification.

The discussion of step 808 does not mention what K is.

In paragraph 103, "border X(0)" and "border X(20)" are not discussed.

Applicant must revise the detailed description of the drawings to be consistent with the steps and elements shown in the drawings to satisfy the requirements of 35 U.S.C. 112, first paragraph.

Appropriate correction is required.

6. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the amended phrases “using the processor, without user intervention, to bring,” “employing a processor of the system, without user intervention, to determine,” “having the processor, without user intervention, analyze” are not found in the application as originally filed.

For claim 1, the step of “preparing the digitized images for display by having a processor of the system analyze the images in order to determine if they are properly adapted for a pre-selected presentation scheme” is not found in the detailed description nor the drawings.

The step of “using the processor, without user intervention, to bring improperly adapted images into their proper pre-selected presentation scheme before displaying the images in the pre-selected presentation scheme” is not found in the detailed description nor the drawings.

For claim 5, the step of preparing includes the step of determining appropriate parameters for properly positioning the digitized images is not found in the detailed description nor the drawings.

For claim 8, the step of "employing a processor of the system, without user intervention, to determine for each digitized image, if the image represents a left or right breast" is not found in the detailed description nor shown in the drawings.

The step of "preparing the digitized images for display by having the processor, without user intervention, analyze the images in order to determine the projection of each digitized image" is not shown in the drawings nor discussed in the detailed description.

The step of "using the determined breast side and projection of each image to display the digitized images according to a pre-selected position irrespective of the order in which the film mammograms were scanned, the display being effected on a display of the system by the processor" is not found in the drawings nor the detailed description.

For claim 9, the steps of "preparing the digitized images..." and "using the analysis of the image..." are not found in the drawings nor the detailed description.

For claim 26, "wherein said processing means, without user intervention, if further operative to analyze, orient and position the digitized images according to a pre-selected presentation scheme irrespective of the order and orientation in which the film mammograms were scanned by the scanner" is not in the drawings nor the detailed description.

7. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Film mammogram processing to scan the film mammograms into digitized images, determine if the digitized images are properly adapted for a pre-selected presentation scheme, and bring improperly adapted images into the pre-selected presentation scheme.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

9. Claims 1-16 and 26-28 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The elements specifying "without user intervention" added in the amendment filed July 26, 2005 are not found in the application as filed. These amended elements are new matter and must be canceled from the claims.

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claims 1-16 and 26-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, "preparing the digitized images for display by having a processor of the system analyze the images in order to determine if they are properly adapted for a pre-selected presentation scheme" is unclear as to whether this step includes determining if the images are properly adapted, or only that an analysis is performed that can be used in a later step of determining if the images are properly adapted. This term is also unclear as to whether it is all one step beginning with preparing, two steps of preparing and analyzing, or three steps of preparing, analyzing, and determining.

In claims 3 and 4, "said step of determining" lacks antecedent basis.

In claims 3 and 6-7, "a digitized image" should be "one of the digitized images" based on the antecedent basis in claim 1 line 4 "digitized images."

In claim 4 "the digitized image" is inconsistent with "digitized images" and should be "one of the digitized images."

In claims 6-7, "said step of determining" is ambiguous in light of claims 1 and 5.

In claim 8 "the projection," "the determined breast side," and "the order" lack antecedent basis. The term "preparing the digitized images for display by having the processor, without user intervention, analyze the images in order to determine the projection of each digitized image" is unclear as to whether one, two or three steps are being performed.

In claim 9, "preparing the digitized images for display by having a processor of the system, without user intervention, analyze the images in order to determine if each image is in standard orientation" is unclear as to whether one, two or three steps are being performed.

The term "using the analysis of the image" is inconsistent with "the digitized images" mentioned earlier in the claim.

The phrase "the orientation in which the film mammograms were scanned" lacks antecedent basis.

In claims 10-16, "the image" is inconsistent with "the digitized images" in claim 9.

In claim 11, "the breast and muscle tissue" and "the binarized pixels" lack antecedent basis. Also, "an image" at line 12 is inconsistent with "the digitized images" in claim 9. The "corner selected" should be "selected corner" to have antecedent support. The term "the standard position" lacks antecedent basis.

In claim 12, "the original improper flip" lacks antecedent basis.

In claim 15 "the breast and muscle tissue" lacks antecedent basis. The term "the largest bright objects in the upper half" is inconsistent with "the largest bright object in the upper half" later in the claim.

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

13. Claims 1-16 and 26-28 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent Number 7,146,031 issued to Hartman et al. ("Hartman").

For claim 1, Hartman discloses a method for processing film mammograms, said method including the steps of: scanning a set of film mammograms, thereby to obtain digitized images of the film mammograms (see figure 1, scanner 102); storing the digitized images in a memory of the system (see computer memory 208 in figure 2); preparing the digitized images for display by having a processor of the system analyze the images in order to determine if they are properly adapted for a pre-selected presentation scheme (see steps 1706 and 1708 of figure 17 and column 14 line 64 through column 15 line 14); and using the processor, without user intervention, to bring any improperly adapted images into their proper pre-selected presentation scheme before displaying the images in the pre-selected presentation scheme (see step 1710).

For claim 2, Hartman discloses step of preparing includes the step of determining whether the digitized images are properly oriented (see figure 17).

For claim 3, Hartman discloses said step of determining includes determining whether a digitized image has been inadvertently flipped (see column 14 lines 1-2 and lines 52-57).

For claim 4, Hartman discloses said step of determining includes determining whether the digitized image has been inadvertently rotated (see column 11 line 61-column 12 line 5).

For claim 5, Hartman discloses said step of preparing includes the step of determining appropriate parameters for properly positioning the digitized images (see figure 8 and step 1612 of figure 16).

For claim 6, Hartman discloses determining includes determining whether a digitized image is an image of the left or right breast (see figure 8 and figure 13).

For claim 7, Hartman discloses said step of determining includes determining whether a digitized image is a craniocaudal (CC) or mediolateral oblique (MLO) projection (see figures 8 and 16).

For claim 8, Hartman discloses a method for processing film mammograms, said method including the steps of: scanning a set of film mammograms, thereby to obtain digitized images of the film mammograms (see figure 1); storing the digitized images in a memory of the system (see figure 2); employing a processor of the system, without user intervention, to determine for each digitized image, if the image represents a left or right breast (see figures 8 and 16); preparing the digitized images for display by having the processor, without user intervention, analyze the images in order to determine the projection of each digitized image (see figure 16); and using the determined breast side and projection of each image to display the digitized images according to a pre-selected position irrespective of the order in which the film mammograms were scanned, the display being effected on a display of the system by the processor (see figure 17).

For claim 9, Hartman discloses a method for processing film mammograms in a computer system, said method including the steps of: scanning a set of film mammograms, thereby to obtain digitized images of the film mammograms (see figure 1); storing the digitized images in a memory of the system (see figure 2); preparing the digitized images for display by having a processor of the system, without user intervention, analyze the images in order to determine if each image is in standard orientation (see figure 17); and using the analysis of the image to display the digitized images in the standard orientation irrespective of the orientation in which the film mammograms were scanned, the display being effected on a display of the system by the processor (see figure 17).

For claim 10, Hartman discloses said step of preparing includes the step of determining if the image was scanned after being inadvertently flipped (see column 14 lines 1-2 and lines 52-57).

For claim 11, Hartman discloses said step of preparing, further includes the steps of: providing a binarized digitized image; removing the regions of the breast and muscle tissue from the image; determining the distance between each of the binarized pixels in a selected corner of the digitized image having a value of "1" and the nearest pixel having a value of "0", the corner selected being the corner where a patient identification label is likely to be located based on a previous determination of breast side and the standard position of a label in an image; choosing the maximum distance found in said step of determining the distance; and comparing the maximum distance to a predetermined threshold value thereby to determine whether the film was inadvertently

flipped when scanned and whether there is a label in the corner selected (see figure 14 and column 13 lines 10-22, see also figure 16).

For claim 12, Hartman discloses the step of correcting for the flipped image by correctively flipping the image in a direction opposite to the original improper flip (see column 14 lines 1-2).

For claim 13, Hartman discloses the step of correcting for the flipped image by flipping the image and additionally, if required, rotating the image (col. 14 lines 46-63).

For claim 14, Hartman discloses said step of preparing further includes the step of determining if the image was scanned after being inadvertently rotated (figure 17).

For claim 15, Hartman discloses said step of determining further includes the steps of: providing a binarized digitized image; removing the regions of the breast and muscle tissue from the image; removing a previously located label from the image; determining the size of the largest bright objects in the upper half of the image and the largest object in the lower half of the object; and comparing the size of the largest bright object in the lower half of the image and of the largest bright object in the upper half of the image against a predetermined value, wherein when the object in the lower half exceeds the predetermined value and the object in the upper half does not, a tag is located in the lower half of the image establishing that the image has been rotated (figure 14 and column 13 lines 10-22, see also figure 16).

For claim 16, Hartman discloses the step of correcting for the inadvertently rotated image by correctively rotating the image (column 14 lines 46-63 and figure 17).

For claim 26, Hartman discloses a workstation system for scanning film mammograms and displaying their digitized images, said system including: a scanner operative to receive and digitize film mammograms from a patient; processing means for receiving digitized images from said scanner, said processing means being operative to evaluate the digitized images of the film mammograms so as to detect suspicious lesions therein and also operative for storing said digitized images; wherein said processing means, without user intervention, is further operative to analyze, orient and position the digitized images according to a pre-selected presentation scheme irrespective of the order and orientation in which the film mammograms were scanned by the scanner; and output means in communication with said processing means for outputting said digitized images in the pre-selected presentation scheme (see figures 1 and 17).

For claim 28, Hartman discloses said output means is a display in communication with said processing means, said display operative to display the digitized images according to the pre-selected presentation scheme (see figure 1).

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hartman in view of Official notice.

Hartman discloses the elements of claim 26 and an I/O unit 212 such as a flat panel display.

Hartman does not disclose expressly a printer.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use a printer as I/O unit 212 instead of a flat panel display. Applicant has not disclosed that printing images on paper instead of displaying images on a display screen provides an advantage, is used for a particular purpose or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with a printer because printing digital images is well known in the art.

Therefore, it would have been obvious to one of ordinary skill in this art to modify the I/O unit 212 with a printer to obtain the invention as specified in claim 27.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent Number 7,095,882 issued to Akahori discloses a method of rotating x-ray images of breasts based on the photographing condition as discussed in the abstract and shown in figure 4.

U.S. Patent Number 6,055,326 issued to Chang et al. discloses a method for orienting chest images as discussed in the abstract and shown in figure 12.

U.S. Patent Number 7,140,769 issued to Kay discloses a method for orienting x-ray images.

U.S. Patent Number 7,116,813 issued to Funahashi discloses a method for recording the orientation and transforming the orientation of an image as discussed in the abstract and shown in figure 10.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey S. Smith whose telephone number is 571 270-1235. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on 571 272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JSS
March 9, 2007



JINGGE WU
SUPERVISORY PATENT EXAMINER